

**WHAT IS CLAIMED IS:**

1. A phase voltage circuit, comprising:

2 a line voltage stage, coupled to at least three input voltage  
3 lines, configured to provide at least two corresponding line  
4 voltages; and

5 a difference voltage stage, coupled to said line voltage  
6 stage, configured to provide at least one phase voltage from said  
7 at least two corresponding line voltages.

2. The circuit as recited in Claim 1 wherein said at least  
2 three input voltage lines lack a neutral line.

3. The circuit as recited in Claim 1 wherein said line  
2 voltage stage comprises two differential amplifiers.

4. The circuit as recited in Claim 3 wherein a first of said  
2 two differential amplifiers provides a first line voltage by  
3 subtracting a second input voltage from a first input voltage and  
4 a second of said two differential amplifiers provides a second line  
5 voltage by subtracting said first input voltage from a third input  
6 voltage.

5. The circuit as recited in Claim 1 wherein said difference  
2 voltage stage comprises one differential amplifier.

6. The circuit as recited in Claim 5 wherein said  
2 differential amplifier provides a phase voltage by:  
3 subtracting a second line voltage from a first line voltage to  
4 yield a difference; and  
5 scaling the difference by a scaling factor.

7. The circuit as recited in Claim 1 wherein said line  
2 voltage stage and said difference voltage stage employ a common  
3 reference point.

8. A method of providing at least one phase voltage,  
2 comprising:

3 initially providing at least two corresponding line voltages  
4 from at least three input voltage lines; and

5 subsequently providing said at least one phase voltage from  
6 said at least two corresponding line voltages.

9. The method as recited in Claim 8 wherein said at least  
2 three input voltage lines lack a neutral line.

10. The method as recited in Claim 8 wherein said providing  
2 of said at least two corresponding line voltages is carried out  
3 with at least two differential amplifiers.

11. The method as recited in Claim 10 wherein said providing  
2 of said at least two corresponding line voltages comprises:

3 employing a first of said two differential amplifiers to  
4 provide a first line voltage by subtracting a second input voltage  
5 from a first input voltage; and

6 employing a second of said two differential amplifiers to  
7 provide a second line voltage by subtracting said first input  
8 voltage from a third input voltage.

12. The method as recited in Claim 8 wherein said providing  
2 of said at least one phase voltage is carried out with at least one  
3 differential amplifier.

13. The method as recited in Claim 12 wherein said  
2 differential amplifier provides a phase voltage by:

3 subtracting a second line voltage from a first line voltage to  
4 yield a difference; and

5 scaling said difference by a scaling factor.

14. The method as recited in Claim 8 wherein said providing  
2 of said at least two corresponding line voltages and said providing  
3 of said at least one phase voltage are carried out employing a  
4 common reference point.

15. A phase voltage system for measuring three-phase  
2 voltages, comprising:

3 three input voltage lines; and

4 a phase voltage circuit, including:

5 a line voltage stage, coupled to said three input voltage  
6 lines, that provides three corresponding line voltages, and

7 a difference voltage stage, coupled to said line voltage  
8 stage, that provides three corresponding phase voltages from  
9 said three corresponding line voltages.

16. The system as recited in Claim 15 wherein said at least  
2 three input voltage lines lack a neutral line.

17. The system as recited in Claim 15 wherein said line  
2 voltage stage has three differential amplifiers.

18. The system as recited in Claim 17 wherein a first of said  
2 three differential amplifiers provides a first line voltage by  
3 subtracting a second input voltage from a first input voltage, a  
4 second of said three differential amplifiers provides a second line  
5 voltage by subtracting a third input voltage from said second input  
6 voltage and a third of said three differential amplifiers provides  
7 a third line voltage by subtracting said first input voltage from  
8 said third input voltage.

19. The system as recited in Claim 15 wherein said difference  
2 voltage stage has three differential amplifiers.

20. The system as recited in Claim 19 wherein,  
2 a first of said three differential amplifiers provides a first  
3 phase voltage by  
4 subtracting a third line voltage from a first line voltage to  
5 yield a first difference, and  
6 scaling said first difference by a scaling factor;  
7 wherein a second of said three differential amplifiers  
8 provides a second phase voltage by  
9 subtracting said first line voltage from a second line voltage  
10 to yield a second difference, and  
11 scaling said second difference by said scaling factor; and  
12 wherein a third of said three differential amplifiers provides  
13 a third phase voltage by subtracting said second line voltage from  
14 said third line voltage to yield a third difference, and  
15 scaling said third difference by said scaling factor.

21. The system as recited in Claim 15 wherein said line  
2 voltage stage and said difference voltage stage employ a common  
3 ground.